

HOW WILL STOCK EXCHANGES STILL CREATE VALUE

A closer look to exchange strategies on
competition, technology and ESG

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Setting the Scene: Changing Global Paradigms and External Factors

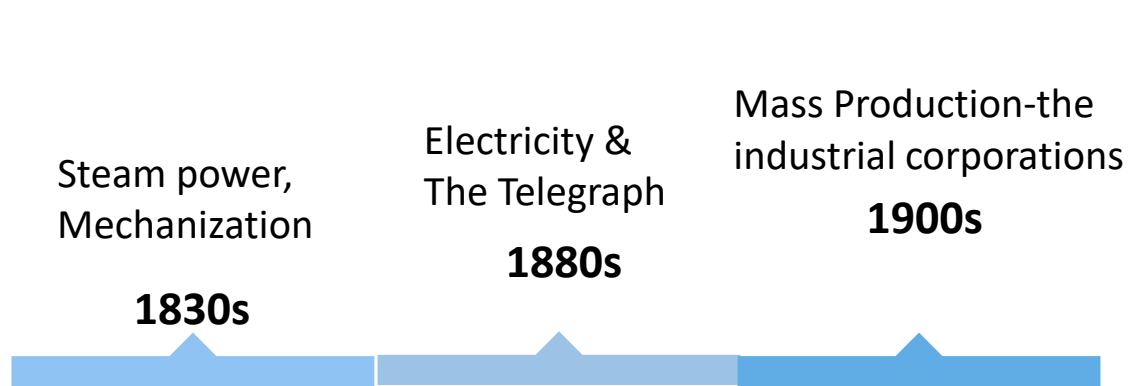
Evolution of the Competition

Basic Setup of the Exchanges: A Closer Look to Strategies

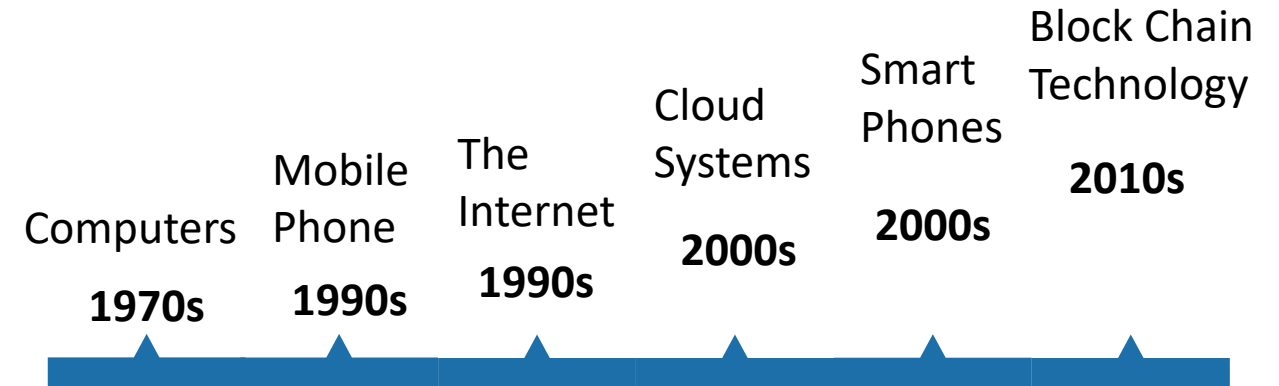
Quick Conclusion

Global Paradigm Shift

Industrial Revolution



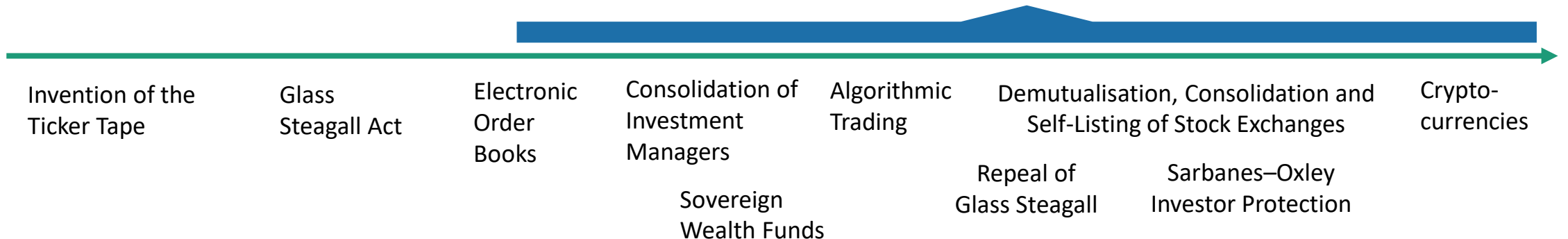
Information Revolution – Rapid Changes



Capital Markets

Revolution

Rising competition



External Factors Affecting Stock Exchanges



Decentralisation

Distributed ledgers
technology

Led to changes in

- Transparency
- Trust
- Capital management
- Risk Management
- Product opportunities
- Security

Has impacts on

- Payments
- Securities issuance
- Smart contracts
- Safekeeping

ESG – The new normal

Key reasons for considering ESG

- Reduce ESG risks
- Need to comply with regulation
- Environmental and social concerns

Cumulative US\$ 1 trillion green bond issuance since 2007
Social and sustainability bonds have gained significant traction, but predominantly in developed markets
(Worldbank)



The evolution of competition



Main effects of competition on market quality

**Competition within market
(national level)**

- Reduction in listing and trading fees
- Consolidation, M&As

**Competition among markets
(international level)**

- Adaptations in regulatory landscape
- Consolidation, M&As
- Introduction of new products and services

The evolution of competition

Effects of international competition

What do issuers look for:

Listing rules

Reporting requirements

Listing costs

Alternative products: one-stop shop

Market size & valuations



What do investors look for:

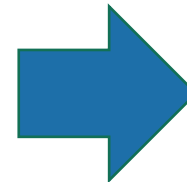
Trading costs

Liquidity

Corporate governance rules

Alternative products: one-stop shop

Returns affected by the exchange rate, country risk etc.



To attract issuers and investors, exchanges focused on listing & corporate governance rules, fee structures, product and service diversification.

Competition resulted in structural changes: Demutualisation, consolidation (M&As) and self-listing

Structural changes

Corporate Transformations of Selected Stock Exchanges

	Establishment	Consolidation through M&As	Demutualisation	Listing
ASX	1987	2006 (Derivatives)	1996	1998
B3 Brasil Bolsa Balcao	1890	2008 (Derivatives), 2017 (Post Trade)	2007	2007
Borsa İstanbul	1985	2013 (Derivatives, Commodities, Post Trade)	2013	
Bursa Malaysia	1964		2004	2005
Deutsche Boerse	1990	1992 (Derivatives, Post Trade)	2000	2001
Euronext	2000	2001 (Derivatives), 2007 (NYSE)		2014
Hong Kong Exchanges and Clearing	1980	2000 (Derivatives)	2000	2000
ICE -NYSE	1817	2007(Euronext), 2013 (ICE)	2006	2006
Johannesburg Stock Exchange (JSE)	1887	2001 (Derivatives), 2009 (Bonds)	2005	2005
London Stock Exchange	1801	2007 (Bonds), 2013 (Post Trade)	2000	2000
Moscow Exchange (MOEX)	1992 (MICEX), 1995 (RTS)	2011		2013
Nasdaq	1971	1998 (AMEX), 2007 (OMX)	2000	2002
Singapore Stock Exchange (SGX)	1973	1999 (Derivatives), 2008 (Commodities)		2000
Tel Aviv Stock Exchange (TASE)	1953		2017	2019
Warsaw Stock Exchange	1991		2010	2010

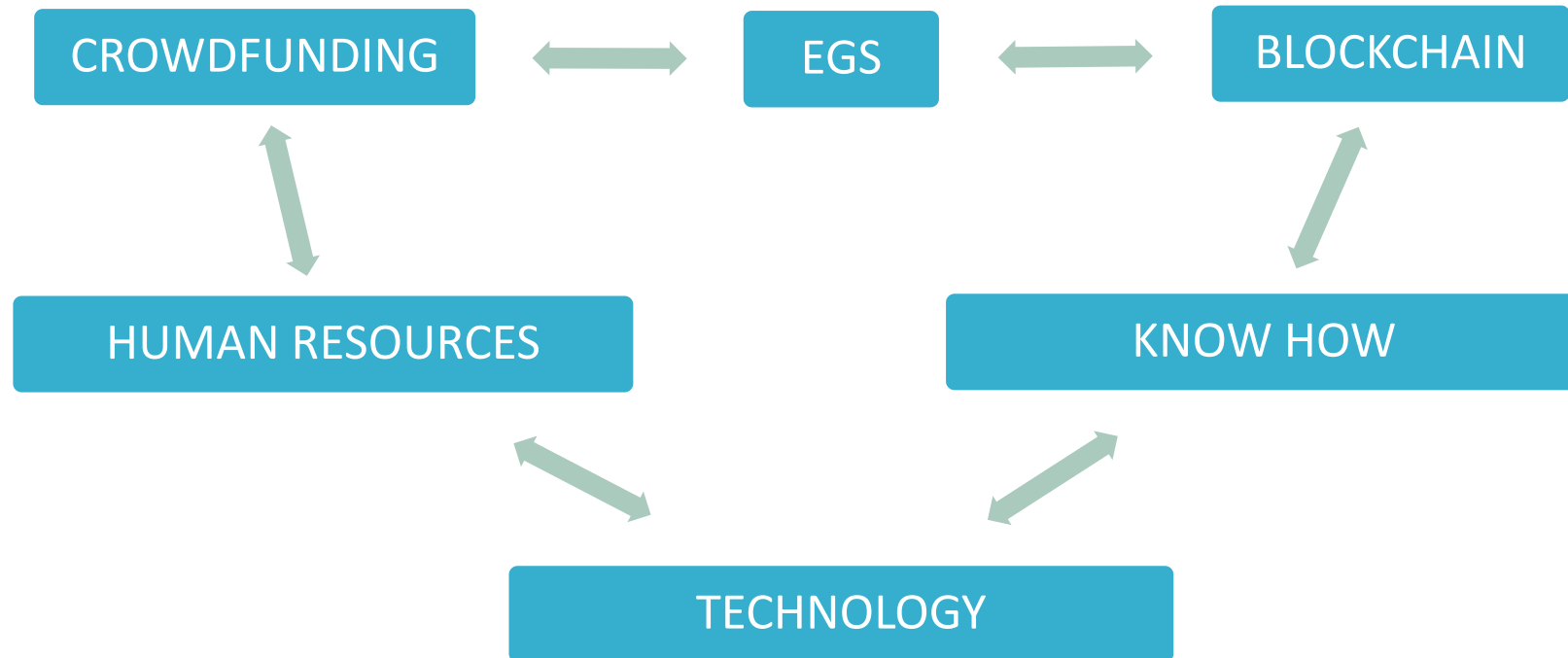
- Improved market quality
Abukari and Otchere (2020)
- Positive impact on cash holdings of a stock exchange and improves profitability (*El Azza (2019)*)
- Better governance quality
El Azza (2019)
- Long term performance
Slimane and Angulo (2019)

Listed Stock Exchanges

EXCHANGES	COUNTRY	IPO DATE	FREE FLOAT %	MARKET CAP \$	2020 PRICE CHANGE %	P/E RATIO	P/B RATIO	EBITDA MARGIN %	NET PROFIT MARGIN %
CME Group	USA	06.12.2002	98,5	59.263.371.707	-17	25	2,23	62,88	43,5
Hong Kong Exchanges & Clearing	Hong Kong	27.06.2000	94,1	56.503.898.470	38,2	48	10,22	70,28	69,2
Intercontinental Exchange	USA	16.11.2005	98,5	50.486.684.467	0,4	25	2,98	63,55	37,2
London Stock Exchange Group	UK	15.05.2006	97,7	37.090.819.203	10	72	8,58	54,54	18
Deutsche Boerse	Germany	05.02.2001	100,0	35.231.052.774	19,7	28	4,97	54,66	30,3
Brasil Bolsa Balcao	Brasil	01.10.2007	100,0	21.885.948.434	38,3	37	4,64	72,09	45,9
Nasdaq	USA	01.07.2002	69,5	19.730.392.186	13,2	27	3,66	30,2	18,2
Japan Exchange Group	Japan	04.01.2004	97,5	12.887.402.699	33,5	29	4,64	66,24	38,2
Australian Stock Exchange	Australia	14.10.1998	98,6	11.736.173.707	13,5	34	4,58	79,98	45
Cboe Global Markets	USA	15.06.2010	99,5	10.433.306.655	-20,2	24	3,15	30,54	14,9
Euronext Paris	France	20.06.2014	89,2	7.300.188.798	30,2	25	7,21	58,82	32,7
Singapore Exchange	Singapore	23.11.2000	76,4	6.317.341.170	-5,7	19	8,11	57,58	43
TMX Group Limited (Toronto)	Canada	06.11.2002	98,9	5.505.835.004	18,7	29	2,1	40,14	21,3
Moscow Exchange MICEX	Russia	04.02.2013	78,0	3.709.677.069	15,1	11	1,93	60,95	45,6
Bolsas y Mercados Espanoles	Spain	14.07.2006	5,2	3.099.030.278	-2,8	22	6,59	58,37	42,2
Dubai Financial Market	UAE	23.11.2006	19,3	1.781.746.896	-11,8	51	0,86	65,24	36,9
Bursa Malaysia	Malaysia	18.03.2005	63,2	1.475.494.611	30,8	31	8,69	54,39	38,7
Bolsa Mexicana de Valores	Mexico	13.06.2008	100,0	1.176.099.934	12,2	18	3,6	57,73	37,4
Multi Commodity Exchange India	India	09.03.2012	78,0	876.122.359	10,2	28	3,71	41,34	63,2
Johannesburg Stock Exchange	S. Africa	02.06.2006	99,9	639.211.970	14,5	15	2,69	40,36	32
Warsaw Stock Exchange	Poland	09.11.2010	65,0	465.861.460	12	15	2,05	57,58	35,5
Tel Aviv Stock Exchange	Israel	01.08.2019	100,0	454.082.375	34,4	71	2,56	22,2	6,8
National Stock Exchange of India	India	03.02.2017	100,0	283.043.430	-6,3	18	0,87	21,09	20,1
Philippine Stock Exchange	Phillipines	15.12.2003	78,8	274.357.603	-4,6	24	2,82	57,79	52,6
New Zealand Exchange (NZX Ltd)	New Zealand	04.06.2003	86,5	257.278.214	7,3	27	6,04	45,1	21,1
Hellenic Exchanges SA	Greece	21.08.2000	95,0	224.141.576	-27,3	28	1,82	41,14	18,9
Bursa de Valori Bucuresti S.A.	Romania	08.06.2010	100,0	44.946.930	-3,9	25	1,73	22,68	18,3
Nairobi Securities Exchange	Kenya	09.09.2014	93,2	18.598.368	-38,1	25	0,98	19,64	11,2
Bulgarian Stock Exchange	Bulgaria	06.01.2011	49,9	16.646.313	-9,1	11	1,42	45,14	26,1
Zagrebacka Burza	Croatia	31.08.2016	36,8	8.547.102	-22	32	1,37	-49,02	6,1

BASIC SETUP OF EXCHANGES

1. Technology lies in the core of the Exchange setup.
2. Human Resources and Know-how builds up the second layer of the setup.
3. Finally new trends are on top of them.



A Closer Look to Selected Exchange Strategies

	PRODUCTS			TECHNOLOGY	GROWTH			HUMAN CAPITAL	
	Product and service diversity	Sustainability	Effective pricing	Technology, digitalisation and data	Organic growth	M&As	Stakeholder cooperation	Cost and operational efficiency	Effective organisation human capital
ASX	X			X			X		X
B3 Brasil Bolsa Balcao	X	X	X		X		X	X	
Borsa İstanbul	X	X		X	X				X
Bursa Malaysia	X	X		X	X		X		X
Deutsche Boerse	X			X	X	X	X	X	X
Euronext	X	X		X		X	X	X	
Hong Kong Exchanges and Clearing	X	X		X		X			X
ICE-NYSE				X	X	X			
Johannesburg Stock Exchange (JSE)	X	X		X		X	X	X	X
London Stock Exchange	X	X		X	X	X			X
Moscow Exchange (MOEX)	X		X	X	X	X	X		
Nasdaq	X			X	X	X			
Singapore Stock Exchange (SGX)	X				X		X		
Tel Aviv Stock Exchange (TASE)	X		X	X			X		
Warsaw Stock Exchange	X			X	X	X			

Is the Exchange innovative and meets the markets' needs?

Does the Exchange understand and use technology well?

Does the Exchange have growth prospects?

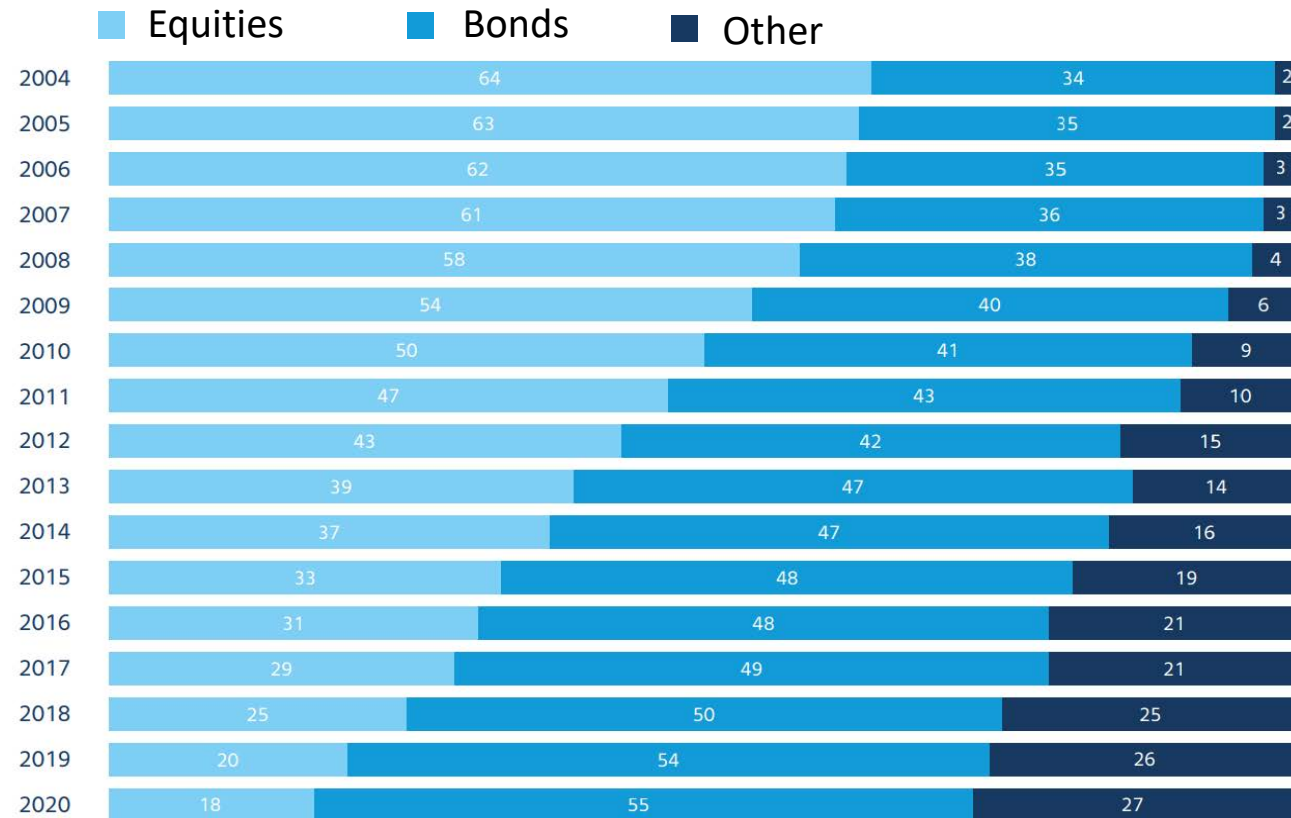
Does the Exchange have the right skills?
Is the Exchange developing its people?

Trend Topics - I

New products and services

- Expanding product portfolio is one of the priorities of exchanges.
- We observe that exchanges tend towards commodity, derivatives and FX markets.

Changes in broad strategic asset allocation for UK plans (%):



Source: Mercer Asset Allocation Survey, 2020

Data & Technology

- Exchanges establish FinTech hubs, enters into partnerships with data and technology companies.
- LSEG's acquisition of Refinitiv, which was completed in January 2021, significantly enhanced the exchanges ability to drive growth through innovation in data analytics. The combination of Refinitiv and FTSE Russell increased LSEG'S capabilities in data, analytics and indices.

Trend Topics - II

ESG

- MOEX will offer climate-related transitional bonds and sustainability-linked bonds in addition to existing social and green bonds.
- LSEG confirmed that it had become a signatory to the Business Ambition for 1.5°C, and a member of the United Nations Climate Change “Race to Zero”.
- Deutsche Börse Group (DBG) announced its new climate strategy which aims at net carbon neutrality until 2025. DBG, offering a large array of ESG, climate and sustainability indices. More precisely, the number of ESG indices raised from 224 to 296 in 2020, ready to grow further, and provide clients with the solutions demanded.
- HKEX launched the Sustainable and Green Exchange, STAGE, Asia’s first multi-asset sustainable investment product platform.
- SGX announced that it is going to invest S\$20 million in expanding sustainability initiatives through SGX FIRST, including ESG-focused products, capacity building for the financial ecosystem, as well as strengthening internal and community commitments.
- B3 calculates Corporate Sustainability Index (ISE) and Carbon Efficiency Index (ICO2). The number of listed companies participating in the ISE B3 portfolio in 2021 increased 69% after B3 made the participation in the ISE B3 “Simulated category” free of charge for listed companies.
- Borsa Istanbul (BIST) is planning to establish a separate market for green bonds and green sukuk.

Conclusion

- There is ongoing transformation across business and financial markets
- There is high cost pressure, therefore finding a unique value proposition is important
- ESG is the new normal. Investors have an increasing appetite to take into account ESG considerations. Therefore exchanges will increasingly focus on the ESG products and services.
- The financial world is getting increasingly complex; technology and data is critical– use of data will transform the way we think and analyse information.
- Distributed Ledger Technology has a transforming effect in capital markets. Although it has a transformational power, it is not the solution to all problems and we do not foresee it will abolish traditional ways in stock markets.